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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,131	06/22/2001	David W. Daniel	01-107	7730

7590 05/20/2004
LSI LOGIC CORPORATION
1551 MCCARTHY BLVD, MS: D-106
PATENT LAW DEPARTMENT
MILPITAS, CA 95035

EXAMINER

CHU, CHRIS C

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

09/887,131

DANIEL ET AL.

Examiner

Chris C. Chu

Art Unit

2815

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Request for Continued Examination

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 17, 2004 has been entered. An action on the RCE follows.

Response to Amendment

2. Applicant's amendment filed on January 13, 2004 has been received and entered in the case.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyawaki et al. '694.

Regarding claim 1, Miyawaki et al. discloses in Fig. 26A and column 18, lines 6 – 58 an integrated circuit substrate (1) comprising:

- a first surface (PS) having no layers formed thereon, and
- a second surface (the surface that contains the elements 93) disposed substantially opposite the first surface, the second surface having no layers formed thereon and at least one alignment mark (93) formed thereon.

Further, the limitation “a first surface adapted for receiving a series of aligned layers during the creation of the integrated circuit, the at least one alignment mark adapted for aligning the series of aligned layers one to another during the creation of the integrated circuit” is intended use language which does not differentiate the claimed apparatus over Miyawaki et al.

Regarding claim 2, Miyawaki et al. discloses in Fig. 26A the second surface being divided into a first half and a second half, with one alignment mark in each of the first half and the second half.

Regarding claim 5, Miyawaki et al. discloses in Fig. 26A the at least one alignment mark being recessed into the second surface.

Regarding claim 6, Miyawaki et al. discloses in Fig. 26A the at least one alignment mark comprising geometric shapes in a pattern.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyawaki et al. in view of Glenn et al. '943.

Regarding claim 3, Matsumi discloses the claimed invention except for the second surface being divided into quadrants, with one alignment mark in each of the quadrants. However, Glenn et al. discloses in Figs. 5A the second surface (310B) being divided into quadrants, with one alignment mark (462A ~ 462D) in each of the quadrants. Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to modify Miyawaki et al. by using the second surface being divided into quadrants, with one alignment mark in each of the quadrants as taught by Glenn et al. The ordinary artisan would have been motivated to modify Miyawaki et al. in the manner described above for at least the purpose of using alignment mark as a reference (column 8, lines 43).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyawaki et al. in view of Fujimura '127.

Regarding claim 4, Miyawaki et al. discloses the claimed invention except the at least one alignment mark being printed on the second surface. However, Fujimura discloses in column 4, lines 27 – 28 that the alignment mark may be depressed (etched) or alternatively protruded from (plated on) the chip. Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to modify Miyawaki et al. by using the at least one alignment mark to be printed on the second surface as taught by Fujimura. The ordinary artisan would have

been motivated to modify Miyawaki et al. in the manner described above because it was a conventional alternative method to provide an alignment mark.

Response to Arguments

8. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Smith and Amemiya disclose the bare semiconductor wafer with alignment marks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is 571-272-1724. The examiner can normally be reached on 11:30 - 8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 517-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Application/Control Number: 09/887,131

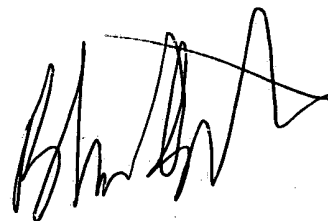
Page 6

Art Unit: 2815

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chris C. Chu
Examiner
Art Unit 2815

c.c.
5/16/04 5:10:58 PM

A handwritten signature in black ink, appearing to read 'Bradley Balmeister', with a stylized, sweeping flourish at the end.

BRADLEY BALMEISTER
PRIMARY EXAMINER